

## **The Role of the Clinical Pharmacist in the Comprehensive Care of HIV**

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With increasing emphasis on ambulatory antiretroviral therapy, treatment adherence and patient education, pharmacists have taken on vital roles as members of a team working to improve patient outcomes. (1) As part of the Montefiore AIDS Center's continuum of care, the Center for Positive Living's Specialty Pharmacy provides a unique service for its patient population. Unlike a community pharmacy, the Specialty Pharmacy provides a wide range of beneficial services targeting both the patients and providers. These include medication and adherence counseling provided by pharmacists trained in the clinical management of HIV/AIDS, as well as a drug information service for medical providers and nursing staff that enhances the provision of comprehensive primary care.

Montefiore's Specialty Pharmacy is physically located within the AIDS Center's ID Clinic and offers a more confidential, convenient alternative to a local pharmacy where expert guidance to specific patient needs may not be provided. Since opening in January 2000, the pharmacy has grown rapidly and now serves 70% of the clinic's approximately 2500 active patients. (Figure 1) One-on-one interactions between HIV-experienced pharmacy staff and patients lead to relationship development and solidification of trust. The pharmacists at Montefiore Specialty Pharmacy work as a team with clinic providers and staff to track patients' progress, help maintain prescribed regimens, recommend alternative therapy options and ensure maximum medication appropriateness.

Lack of coordinated medical information is an ongoing problem in today's healthcare arena. (2) A patient may go to several physicians and pharmacies resulting in an incomplete medical record. In addition, there may be problems in getting timely information to the right provider. "In a study of adverse drug events in two hospitals, many errors were due to incomplete or inaccurate patient information. Results of laboratory tests, current medications, or information about the patient's condition were sometimes not easily accessible when needed, which resulted in prescribing errors. Pharmacists, too, sometimes lacked critical information that would have allowed them to stop an improper order". (2) "The ability to track and coordinate pharmaceutical use as patients move across the system is a necessary component of integrated care" (2). At Montefiore's AIDS Center, pharmaceutical care resides on site, giving all care providers the ability to rapidly access the patient's entire medication profile and generate client-specific medication reports showing care over time. In addition, the Specialty Pharmacy also has immediate access to full information from other inpatient and ambulatory services, including hospital admissions, laboratory data and office visits. This allows the ambulatory pharmacist immediate retrieval of all pertinent patient information.

"Integrated pharmaceutical care is central to the overall treatment and ongoing management of HIV" (2). The on-site pharmacist serves as a liaison between the pharmacy service and medical providers, social workers, nutritionists, psychiatrists and health educators. At Montefiore's AIDS Center, healthcare delivery is organized around the multidimensional needs of the patient. In collaboration with HIV treatment adherence

staff, the Specialty Pharmacy offers private consultation sessions for adherence support and detailed educational information for those patients on HAART, including side effects, drug interactions, and proper drug administration. Counseling services are provided in a manner that is linguistically appropriate in recognition of the impact that cultural beliefs and practices as well as language and literacy have on medication taking and adherence. The pharmacy team then monitors adherence on an ongoing basis through weekly telephone calls. Those patients who are due prescription refills during a given week are reminded to either pick up their medications or have them delivered.

This pharmacy-based technique was modeled after a study conducted by Robert Grossberg, Yawei Zhang and Robert Gross entitled “A time-to-refill measure of antiretroviral adherence predicted changes in viral load in HIV”. The goal of the study was to determine the validity and utility of a pharmacy-based prescription refill measure of antiretroviral therapy adherence over a 3 month time period. This observational cohort study of 110 HIV-infected subjects on stable, highly active antiretroviral regimens resulted in an overall viral load decrease by 0.12 log c/ml (95% confidence interval [CI] 0.01-0.23 log c/ml) for each 10% increase in pharmacy-based time-to-refill defined adherence (3). This service has contributed to our approximately 97% prescription pick-up rate and to optimal patient adherence and decreased treatment failure.

The Specialty Pharmacy is also an active part of the AIDS Center Quality Improvement Committee. Some of the pharmacy's past QI projects have included reducing the overall prescription wait time to 15-20 minutes and, more importantly identifying the need for language assessment by providing Spanish prescription labels and drug monographs for those patients who are not bilingual. “As the American Hispanic population grows, the need for health care services for individuals who do not speak English is becoming increasingly apparent. Spanish-speaking persons encounter difficulties accessing health care” (4). Because of the potential technical language barrier between medical professionals and patients, today's pharmacists need to pay close attention in educating and counseling their non-English speaking clients. The first step to bridging this communication gap is to identify the need for cultural and language assessment and as a result maximize customer service.

As part of a six-week study period, the Specialty Pharmacy conducted, as part of an ongoing regular survey, an evaluation of its Spanish speaking patient population. During this time, “Request for Spanish-speaking Instruction Reminder Forms” were distributed in each exam room throughout the ID Clinic and by the Specialty Pharmacy drop-off window. Patients requiring medication instruction in Spanish were to present these forms to the pharmacy with each prescription. This information, in turn, was then tracked and entered into the pharmacy computer system as part of the patient's permanent record. Results of the study concluded that there was a reasonably high level of cultural need that might have gone unrecognized if not addressed. (See Figures 2 and 3) As an organization that serves the needs of many cultures throughout the Bronx and surrounding areas, the Specialty Pharmacy as well as other health care professionals in the AIDS Center have continued to develop better strategies for providing successful medical translation and ultimately better patient care outcomes.

Other quality improvement projects have included the development of a program to provide medications to the 10% (on average) of patients with pending insurance coverage, as well as collaborating with case workers from the clinic to track and quickly resolve benefit issues. Coordinating an annual patient medication review and

educational day to promote adherence and pharmacy awareness was another notable activity. These individualized patient sessions have provided a unique opportunity to review participating patient medication regimens for problems or inconsistencies. An HIV “cocktail” reminder card was created and distributed to patients as an adherence tool to reinforce the importance of proper medication use. (See Figure 4)

In today's constantly changing healthcare system, integrated medical and pharmaceutical care remains a mainstay for positive therapeutic outcomes. At Montefiore, prescribers and pharmacists function as a “care team” to provide optimal and comprehensive health care management. The structure of pharmacy services at Montefiore and how they are organized within the patient delivery system provides better communication and decision-making on behalf of the patient and promotes expert medication management through effective pharmaceutical training and education.

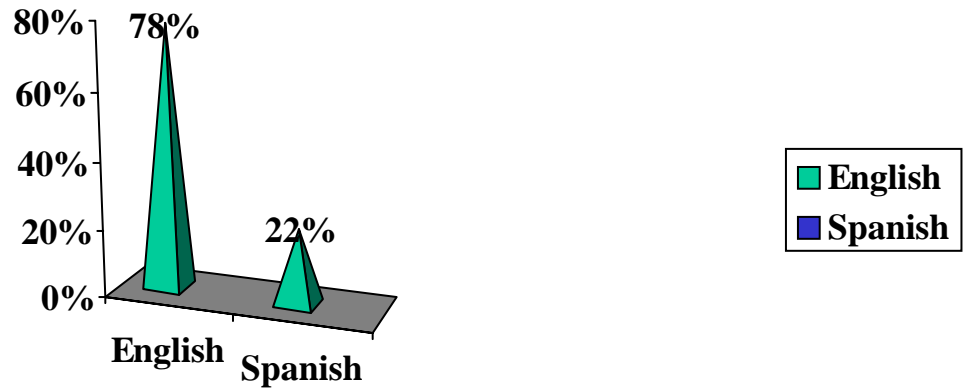
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### **References**

1. Valenti, W. The HIV Pharmacy: Managing Quality and Costs of HIV Care. *The AIDS Reader*. 2002; 12:486-488.
2. Paone, D., Levy, R., & Bringewatt, R. Integrating Pharmaceutical Care: A Vision and Framework. National Pharmaceutical Council; 1999. 8,16 -18.
3. Grossberg, R., Zhang, Y. & Gross, R. A time-to-prescription refill measure of antiretroviral adherence predicted changes in viral load in HIV. *Journal of Clinical Epidemiology*. 2004; 57: 1107-1110.
4. Davidhizar, R., Shearer, R. Strategies for Providing Culturally Appropriate Pharmaceutical Care to the Hispanic Patient. *Hospital Pharmacy*. 2002; 37(5):505-510.

**Figure 2: Prescription Breakdown for Study Period**  
(Total Prescription Volume = 10,183)



Prescriptions with English Labeling – 7942  
Prescriptions with Spanish Labeling - 2241

**Figure 3: Number of Spanish Speaking Patients Identified Before/After Study**

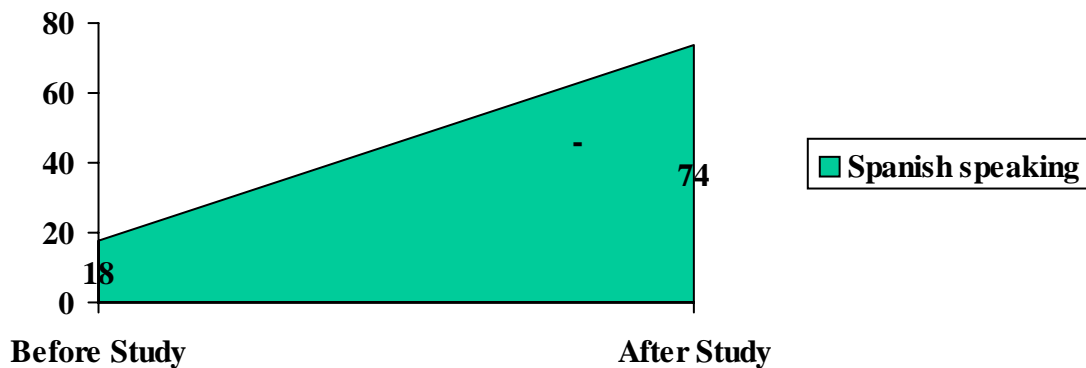



Figure 4

Front

Non-nucleoside



Fusion Inhibitor

Medication Reminder Card

718-920-7869

Protease Inhibitor

Nucleoside

Back

Drug	Dose	With/Without Meals

Important Information to Remember: